

E-999/CI-93-583 ORDER ESTABLISHING INTERIM ENVIRONMENTAL COST  
VALUES

BEFORE THE MINNESOTA PUBLIC UTILITIES COMMISSION

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Chair  
Commissioner  
Commissioner  
Commissioner  
Commissioner

In the Matter of the  
Quantification of Environmental  
Costs Pursuant to Laws of  
Minnesota 1993, Chapter 356,  
Section 3

ISSUE DATE: March 1, 1994  
DOCKET NO. E-999/CI-93-583  
ORDER ESTABLISHING INTERIM  
ENVIRONMENTAL COST VALUES

**PROCEDURAL HISTORY**

The 1993 Legislature enacted Laws of Minnesota 1993, Chapter 356, which became effective August 1, 1993. This law, codified as Minn. Stat. §216B.2422 (Supp. 1993), contains a number of provisions related to renewable energy and resource planning, including a requirement that the Commission "quantify and establish a range of environmental costs associated with each method of electricity generation." The law further requires each utility to "use [these values] in conjunction with other external factors . . . when evaluating resource options in all proceedings before the Commission." The statute establishes March 1, 1994 as the deadline for adopting interim environmental cost values, which are set to expire when "final" values are established.

On August 17, 1993, the Commission issued its ORDER ESTABLISHING PROCEDURES FOR ESTABLISHING INTERIM ENVIRONMENTAL COST VALUES. That Order established a notice and comment process to develop a record for use in setting interim values by the March 1, 1994 statutory deadline. Parties were directed to submit proposed interim values and encouraged to address a list of questions posed in the Order. An 80 day period was established for initial comments and a 30 day time frame was created for reply comments.

The Commission received initial comments from the following parties: (1) the American Wind Energy Association (AWEA); (2) the Center for Energy and Environment (CEE or Center); (3) Cooperative Power (CP); (4) Dairyland Power Cooperative (Dairyland); (5) the Department of Public Service (Department); (6) District Energy, Saint Paul (District Energy); (7) the Institute for Local Self-Reliance (ILSR); (8) the Izaak Walton League of America (League); (9) the Electric Utilities commenting jointly;<sup>1</sup> (10) Minnegasco; (11) the Minnesota Pollution Control

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<sup>1</sup> A group of electric utilities filed joint comments in this proceeding. These utilities were Cooperative Power; Dairyland

Agency (PCA); (12) Minnesota Power (MP); (13) Minnesotans for an Energy Efficient Economy (ME3); (14) Minnkota Power Cooperative (Minnkota); (15) Northern States Power Company (NSP); (16) the Office of the Attorney General, Residential Utilities Division (OAG-RUD); (17) Otter Tail Power Company (Otter Tail); (18) Senator Janet Johnson; (19) Southern Minnesota Municipal Power Agency (SMMPA); (20) United Power Association (United Power or UPA); (21) Western Fuels Association (Western Fuels).

The Commission received reply comments from the following 13 parties: (1) the American Wind Energy Association; (2) Cooperative Power; (3) Dakota Electric; (4) the Department; (5) the Izaak Walton League; (6) Minnegasco; (7) the PCA; (8) Minnesota Power; (9) NSP; (10) Otter Tail Power; (11) the OAG-RUD; (12) United Power; and (13) Western Fuels.

The Commission met to consider this matter on February 2 and 3, 1994.

### **FINDINGS AND CONCLUSIONS**

Minn. Stat. § 216B.2422, subd. 3 requires the Commission to establish environmental cost values, providing as follows:

Subd. 3. **Environmental costs.** (a) The commission shall, to the extent practicable, quantify and establish a range of environmental costs associated with each method of electricity generation. A utility shall use the values established by the commission in conjunction with other external factors, including socioeconomic costs, when evaluating and selecting resource options in all proceedings before the commission, including resource plan and certificate of need proceedings.

(b) The commission shall establish interim environmental cost values associated with each method of electricity generation by March 1, 1994. These values expire on the date the commission establishes environmental cost values under paragraph (a).

This provision replaces language previously contained in Minn. Stat. §216B.164, subd. 4(b) (1993), which required utilities to include the value of avoided environmental costs in their payments to qualifying facilities (QFs). The new law directs utilities and the Commission to use environmental cost values (externality values) as a factor in the evaluation and selection of resources, not as a component of avoided cost payments to QFs. The difference between the two laws represents movement from an

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Power; Interstate Power Company; Minnesota Power; Minnkota Power Cooperative; Northern States Power Company; Otter Tail Power Company; and United Power Association. All of these utilities, except Interstate Power Company, also filed separate comments.

"adder" approach toward a "total cost minimization" approach. The change might also be viewed as movement from a pricing approach to a planning approach, since the new law applies environmental costs only to resource evaluation and selection.

Traditionally, electric utilities have selected resources based on the direct cost of various alternatives. Direct costs represent the utility's expense in acquiring and using resources to generate electricity. Environmental costs as used in Minn. Stat. §216B.2422 reflect the environmental consequences of electric generation that impose costs on society generally. These costs are not reflected in the price of electricity and are therefore often referred to as "environmental externalities." Consideration of environmental externalities in the manner directed by the current statute should enable utility planners to compare the cost of resource alternatives more accurately, taking into account external costs not currently reflected in the cost of generating electricity. This, in turn, should facilitate the selection of the lowest cost resources from a total societal cost perspective as the Legislature intended.

## **I. Legality of this Proceeding**

The Commission's August 17, 1993 Order in this docket established an expedited generic proceeding to adopt interim environmental cost values. Two parties, Western Fuels and Otter Tail Power, question the legality of this expedited generic process. They argue that Minnesota's Administrative Procedure Act (APA) compels the use of a rulemaking or contested case to establish interim values. The Commission disagrees and finds the process established in its August 17 Order consistent with Minnesota law. The law that gave rise to this proceeding does not require a rule or an evidentiary hearing. To the contrary, the statute clearly contemplates a non-evidentiary generic process through which the Commission can adopt interim values within the strict time frame set forth in the law.

### **A. Legislative Intent**

The object of all statutory interpretation is to ascertain and effectuate the intention of the Legislature. Minn. Stat. §645.16. In discerning the Legislature's intent the Commission must presume the Legislature does not intend a result that is absurd, impossible of execution or unreasonable. Minn. Stat. §645.17 (1). The Commission must also presume that the Legislature intends the entire statute to be effective and certain. Minn. Stat. §645.17 (2). The Legislature in this case must, therefore, have intended a Commission process that would allow compliance with the statute. It must also have intended the term "interim" to have significance in the context of the law.

The statute in this case sets a March 1, 1994 deadline for the adoption of interim cost values. The Legislature must have

known, as the parties in this case recognize, that any attempt to implement the statute through a contested case or rulemaking proceeding would almost certainly have taken the Commission well beyond the statutory deadline.<sup>2</sup> Clearly, the Legislature would not have established this time frame without contemplating the use of a more expeditious process. Indeed, the Legislature's use of the term "interim" acknowledges the need for a more abbreviated process. If the Legislature believed the March 1 date was achievable without an expedited proceeding, interim values would be unnecessary. The Legislature would have simply applied the deadline to the general requirement. Therefore, the statutory authority for interim values necessarily implies authority for an interim process consistent with the law's strict deadline.

## **B. Due Process**

This proceeding provides the fundamental fairness and opportunity to be heard essential to due process. Over 20 parties have participated in this proceeding, including the electric utilities potentially affected by interim values.<sup>3</sup> All interested persons have had the opportunity to file written comments both initially and in response to the comments of others. This has produced an extensive written record representing a broad spectrum of views and expertise. After receiving written comments, the Commission held a hearing at which all parties were invited to comment. Oral comment was presented by 11 parties at the hearing.

This proceeding reflects the balance struck by the Legislature between the search for precise externality values and the need to have those values in place for the 1994 resource plan filings. All affected interests have had the opportunity to participate meaningfully in the process, creating a substantial written record on which parties could comment at the Commission's hearing. The interim values produced by this process will be

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<sup>2</sup> Contested cases and controversial rulemakings are generally recognized as very lengthy processes, particularly when they involve highly controversial issues like the issues raised in this proceeding. The Commission's contested cases generally take at least 10 months to complete. The Commission's controversial rulemakings usually require 12 to 24 months.

<sup>3</sup> The statute applies to electric utilities capable of generating at least 100,000 kilowatts of electric power and serving the needs of at least 10,000 customers. Minn. Stat. §216B.2422, subd. 1(b) (Supp. 1993). This includes all the investor-owned electric utilities serving Minnesota customers and a limited number of cooperative and municipal utilities. Although nearly all of these utilities have participated in this proceeding, only four (Otter Tail, Minnesota Power, UPA and CP) are likely to use the interim values adopted in this Order since the remaining utilities will not file their next resource plans until July of 1995, when final values should be in place.

applied individually only to utilities that participated in this proceeding. The Commission has reviewed this record carefully and is confident it supports the range of values adopted today, consistent with Minnesota law and due process.

## **II. Commerce Clause Implications**

Western Fuels asserts that out-of-state generation would have no impact on Minnesota's environment. Western Fuels argues that, absent such an environmental impact, the externality values adopted here would violate the Commerce Clause of the United States Constitution if used to (1) regulate purchases by Minnesota utilities of electricity generated out-of-state; (2) limit investment in power plants located outside the state; or (3) compel Minnesota utilities to use in-state generating plants without regard to the comparative cost of generating units outside the state. The Commission finds Western Fuels' argument unsupported by the law or the facts in this case.

First, Western Fuels is wrong to suggest that out-of-state generation does not impact Minnesota's environment. Air emissions from utility plants can travel great distances and do not recognize state borders. Acid rain, in particular, is widely recognized as the byproduct of sulfur dioxide emissions hundreds or even thousands of miles away. Second, Western Fuels has applied the wrong legal standard to its Commerce Clause analysis. Minnesota is not required to show a "real and substantial interest" in a regulation that burdens interstate commerce as Western Fuels suggests. The state need only show a legitimate state interest where the state regulation does not discriminate between in-state and out-of-state commerce. An evenhanded regulation that imposes only incidental burdens on interstate commerce will be upheld unless the burden imposed clearly exceeds the putative local benefits. Minnesota v. Clover Leaf Creamery, Co., 101 S.Ct. 715, 728 (1981).

The interim values adopted here do not discriminate between in-state and out-of-state generation. A ton of sulfur dioxide will be valued the same regardless of its geographic origin. When applied, these interim values will further the legitimate and important state interest in ensuring that electric utilities consider the economic and environmental impacts of their resource decisions to the fullest extent possible. Consideration of environmental externalities in utility planning will enhance Minnesota's ability to minimize the total societal cost of generating electricity, providing both environmental and economic benefits. The benefit to the citizens of Minnesota exceeds any possible burden imposed on interstate commerce.

### **III. Federal Preemption**

Western Fuels argues that the use of environmental externalities in resource planning is preempted by the Federal Energy Policy Act (Act), since the resource planning portion of the Act does not include environmental externalities in its definition of "lowest system cost." The Commission rejects this argument and concludes that the use of externalities in Minnesota's resource plan proceedings is not preempted by federal law.

The historic police powers of the states are not superseded by a federal act unless Congress clearly manifests such intent. Cippollone v. Liggett Group, Inc., 112 S.Ct. 2608, 2617 (1992). Nothing in the Energy Policy Act expressly or by implication precludes the use of environmental externalities in state resource plan proceedings, which have historically operated under the regulatory authority of the states. To the contrary, the Act states directly that its purpose is to "supplement otherwise applicable State law," not replace it. 16 U.S.C. §2601 (a). Congress has clearly deferred to the states on this matter, consistent with its traditional recognition of the strong state interest in regulating public utilities.

Although the Act defines environmental costs without reference to externalities, that definition is only set forth for consideration by states. Id. State regulatory authorities may "decline to implement any standards [in the Act]," so long as they "state their reasons in writing." 16 U.S.C. §2621 (c)(B). The state of Minnesota has chosen to establish a more comprehensive resource planning process than the one suggested by the Energy Policy Act. The Act leaves ample room for states to act in this manner.

### **IV. Summary of Commission Action**

Quantifying environmental externalities is a new undertaking for this and most other state Commissions. Although this Commission has required utilities to consider environmental factors in resource planning, this proceeding represents its first attempt to assign monetary values to environmental externalities.

The Commission is faced with two central issues: (1) which environmental externalities should be valued, and (2) what range of values should be applied to each externality. The Commission is convinced that the expedited nature of this proceeding and Minnesota's limited experience applying externality values require a conservative approach to these issues. Minnesota must, therefore, rely substantially on the work and experience in other jurisdictions at this juncture.

Accordingly, the interim values adopted in this proceeding apply only to the air emissions most commonly valued in other jurisdictions engaged in externality quantification. Similarly, the values established for each emission are consistent with the

lower and mid-level values used elsewhere for these emissions. The Commission has relied heavily on values used by the Bonneville Power Association (BPA), since BPA serves an area that closely parallels Minnesota demographically. BPA's values also tend to be more conservative. The Commission's independent review of the record supports its conclusion that the interim values adopted today reasonably reflect the external environmental costs of generating electricity in Minnesota.

## **V. Emissions to be Valued**

The Commission establishes interim values for the following five emissions: (1) sulfur dioxide (SO<sub>2</sub>); (2) nitrogen oxides (NO<sub>x</sub>); (3) volatile organic compounds (VOCs); (4) particulates (PM-10); and (5) carbon dioxide (CO<sub>2</sub>). Most authorities classify the first four as regional pollutants, which means generally that they affect the environment at or near their source. Sulfur dioxide is most commonly identified with acid rain. Nitrogen oxides and volatile organic compounds are ozone precursors, which means they interact with sunlight and other chemicals to form ozone.<sup>4</sup> Particulates or PM-10 refers to airborne particles less than 10 microns in diameter, which can adversely affect public health. Carbon dioxide is considered a greenhouse gas, which means that it is thought to contribute to global climate change. Most of the parties to this proceeding have urged the Commission to confine its externality values to emissions quantified in other states.<sup>5</sup> The Commission agrees that this is the best approach given the constraints of this proceeding. Interim values should be assigned here only to the externalities most commonly valued elsewhere. This ensures that Minnesota's interim values represent the broadest possible consensus concerning which externalities pose the most significant risk to the environment and which ones lend themselves most reasonably to quantification.

The majority of jurisdictions that have quantified environmental externalities have focused their valuation efforts on the emissions valued in this proceeding.<sup>6</sup> Most of the participants

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<sup>4</sup> Nitrogen Oxides also contribute to acid rain.

<sup>5</sup> Actually, nearly all the parties recommend limiting the scope of emissions in this way. Three exceptions are the Department, PCA and ME3. These parties recommend assigning values to mercury, which has not been valued in any other jurisdiction.

<sup>6</sup> Three of the six states that have quantified externalities have assigned values to the five emissions valued in this proceeding. These states are California, Nevada and Massachusetts. New York, Bonneville Power Association (BPA) and the 1990 Pace University Study assign values to all these emissions except VOCs. Oregon assigns values to all these emissions except SO<sub>2</sub> and VOCs.



in this case also recommend applying interim values to these externalities, although the utilities would exclude CO<sub>2</sub>. The Commission finds that the record in this case supports the valuation of the five emissions included here. These emissions were identified by other states after lengthy proceedings and careful study. Therefore, it is prudent and reasonable to use them in Minnesota for interim purposes.

The Commission recognizes that several states have assigned values to methane and nitrous oxide and that two of these states have given a value to carbon monoxide. However, while these emissions may be appropriately considered for final values, the record here does not support including them in the interim. The parties in this case have given little attention to methane and nitrous oxide, focusing almost exclusively on carbon dioxide in their evaluation of greenhouse gases. Similarly, the parties have offered no analysis on the significance of carbon monoxide as a regional pollutant. Any valuation of these other emissions must, therefore, await the development of a more comprehensive record.

The Commission also recognizes that some parties to this proceeding have recommended assigning an interim value to mercury. The Commission shares the concern these parties have over the potential impact of mercury emissions on Minnesota's waterways. However, mercury presents an even newer frontier in externality valuation than the other emissions, which themselves have only been quantified within the last several years. No other jurisdiction has assigned monetized values to mercury. Even the comprehensive study of externalities conducted by Pace University (Pace Study) does not provide a value for mercury.<sup>7</sup> Absent experience with mercury valuation outside Minnesota, the Commission must depend on some other basis for quantifying this emission. The record simply does not provide an adequate basis for assigning an interim value to this pollutant.

The Department, PCA and ME3 are the only parties in this proceeding to propose values for mercury. Their values, however, have not been tested in other jurisdictions or adequately scrutinized in this proceeding. The Department's values, for example, are based on testimony given by the Tellus Institute in Wisconsin's Advance Plan 6 Proceeding, and a contingent-valuation study done on behalf of the PCA. The Commission cannot properly evaluate the Department's sources or the studies used by the other parties within the strict time frame imposed on this proceeding. Indeed, other parties have not had the opportunity to file written responses to the Department's or the PCA's proposed mercury values since those values were not submitted until the period for reply comments. The Department's proposal and others can be considered more appropriately in proceedings to establish permanent values.

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<sup>7</sup> See Ottinger et al., "Environmental Costs of Electricity," Pace University, 1990.

Utilities have objected to the prospect of valuing carbon dioxide in this proceeding, arguing that the environmental effects of greenhouse gasses are too uncertain to sustain an externality value. All the non-utility parties, however, contend that the record does support interim values for CO<sub>2</sub>. The Commission agrees with the parties recommending the quantification of CO<sub>2</sub>. Although the scientific community does not unanimously endorse the purported connection between CO<sub>2</sub> and global warming, the international community and the federal government have established policies aimed at reducing CO<sub>2</sub> emissions on the chance that these emissions will, in fact, produce the climatic changes forecast by many. Moreover, most of the states that have quantified environmental externalities have assigned values to CO<sub>2</sub>.

The Commission concludes that the serious national and international concern over carbon dioxide poses a significant risk of future regulation or fees related to CO<sub>2</sub>, which would impose direct costs on electric generation. Assigning a positive externality value to CO<sub>2</sub> properly recognizes this economic risk. The Commission does not intend its decision here to translate into final CO<sub>2</sub> values. The proceedings used to establish permanent values can explore this issue more thoroughly. The Commission may conclude from those proceedings that neither the economic nor the environmental risks justify a CO<sub>2</sub> value. At this point, however, the Commission considers the inclusion of carbon dioxide prudent in view of the broader context of activity and concern in this area.

## **VI. Range of Interim Values**

The Commission establishes the following range of interim values for each specified emission:

- Sulfur Dioxide (SO<sub>2</sub>): \$0 to \$300 per ton;
- Nitrogen Oxides (NO<sub>x</sub>): \$68.80 to \$1640 per ton;
- Volatile Organic Compounds (VOCs): \$1180 to \$1200 per ton;
- Particulates (PM-10): \$166.60 to \$2380 per ton; and
- Carbon Dioxide (CO<sub>2</sub>): \$5.99 to \$13.60 per ton.

The statute implemented here requires the Commission to establish a range of values. Using a range appropriately acknowledges the uncertainty attending externality valuations. It also allows parties to tailor their evaluations of resource options to the specific environmental and economic situation faced by each utility.

The values adopted here reflect the same approach the Commission has taken in defining the scope of emissions to be valued. As discussed above, other jurisdictions and well-recognized studies provide the best sources for interim values given the constraints

of this proceeding, which preclude the development of Minnesota-specific values. These same constraints and the limited experience using externality values in Minnesota support interim values at comparatively low or conservative levels. Minnesota's general compliance with ambient air quality standards adds further support for conservative values since the external cost of most air emissions tends to be greater in areas where the existing air quality is poorest.<sup>8</sup> Therefore, the Commission concludes that the interim value range for each emission should include the lowest reasonable value as the lower limit and a mid-level value as the upper boundary.

The Commission rejects the Department's proposal to establish two sets of values for regional pollutants, one applicable to the Twin Cities metropolitan area, the other applied to the non-metro or out-state areas. This proposal is based on the assumption that the environmental impact of a regional pollutant is greater in areas where the air quality is already poor. The record in this case, however, does not provide sufficient detail on the air quality differences between the Twin Cities and out-state areas to draw any reasonably firm conclusions on whether two sets of values would, in fact, be warranted. Moreover, the interim values adopted here are likely to apply only to utilities with generation facilities in primarily rural service territories.<sup>9</sup> Therefore, to the extent the Commission adopts the Department's proposed values, it will rely only on the out-state figures.

The Commission discusses its interim range of values for each emission in turn below.

#### **A. Sulfur Dioxide (SO<sub>2</sub>)**

The Commission bases its range for sulfur dioxide on two factors: (1) the possibility that the environmental costs of this emission may be internalized, and (2) the current market price under the emissions trading allowance system established under the 1990 amendments to the Federal Clean Air Act (Clean Air Act). The Department and the utilities argue that the environmental costs of sulfur dioxide are internalized under the Clean Air Act, which caps emission levels and establishes an emissions trading system that allows utilities to buy and sell the right to emit SO<sub>2</sub> within the established cap. The Commission recognizes that these

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<sup>8</sup> The Environmental Protection Agency (EPA) has designated all six of Minnesota's air quality regions as attainment areas for ozone and nitrogen dioxide, which means these regions meet federal air quality standards for these pollutants.

<sup>9</sup> Assuming the Commission establishes permanent values in 12 months, interim values will only apply to the 1994 resource plan filings. The utilities scheduled to file in 1994 are MP, Otter Tail, UPA and CP. None of these utilities has significant generating capacity located in the seven county metropolitan area.

costs may be internalized. However, the Commission accepts the possibility that residual SO<sub>2</sub> emissions within the federal cap may impose costs on society that have not been internalized by utilities.

The range established by the Commission reflects both prospects. Setting the low end of the range at zero recognizes the possibility that the environmental costs of SO<sub>2</sub> have been fully internalized. Placing the high end of the range at \$300 recognizes the chance that these costs may not be completely internalized. This dollar amount reflects the current market price of SO<sub>2</sub> under the Clean Air Act's trading allowance system. The Commission agrees with the American Wind Energy Association that this is the appropriate upper limit for this emission. There is no need to look further, for interim purposes, since the market price for SO<sub>2</sub> provides a reasonable estimate of its environmental cost.

## **B. Nitrogen Oxides (NO<sub>x</sub>)**

The Commission bases its range for nitrogen oxides on the Department's proposal, which relies on the Bonneville Power Association's (BPA's) value for the low end of the range and the Pace Study's value for the upper end. BPA is a federal marketing agency which provides electric power to several states in the Northwestern United States. The Pace Study is the most comprehensive study existing on quantifying environmental externalities in the United States. The Commission adopts the Department's proposed range for several reasons.

First, the cost figure proposed for the low end of the range was developed by BPA, which serves an area that is demographically similar to Minnesota. Second, BPA's \$68.80 value is at the low end of the national range, which makes sense for Minnesota since all six of this state's air quality regions meet federal air quality standards for nitrogen dioxide and ozone. Third, the high value in the range was developed in the Pace Study and closely approximates the average value of all the studies.<sup>10</sup> The relatively small difference between the Pace value and the national average suggests that the Pace figure may closely approximate the high-end external cost of NO<sub>x</sub> emissions in Minnesota. Indeed, the Pace value of \$1640 is not substantially different from the upper limit of \$1000 proposed by the utilities. Overall, the interim range established here for NO<sub>x</sub> reasonably reflects the values in Minnesota.

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<sup>10</sup> The Pace Value is \$1640. The value produced by averaging all the studies on NO<sub>x</sub> is \$2464.

### **C. Particulates (PM-10)**

The Commission bases its range for PM-10 on the Department's proposal, which uses BPA's value to define the low end of the range and the Pace Study to set the upper boundary. The Commission considers this range the most appropriate for interim PM-10 values in Minnesota. Again, the demographic similarity between BPA's territory and Minnesota as well as the comparatively conservative level of this value relative to other states support its inclusion as the lower limit in the Commission's interim range. The Pace value appropriately caps the range since it represents a mid-level value nationally.

Although the \$2380 Pace Study value is considerably higher than the \$166.60 value developed by BPA, the magnitude of the range is appropriate for this emission. Levels of PM-10 can vary dramatically from area to area, which probably explains the widely divergent values throughout the country for this emission.<sup>11</sup> Given the influence of existing air quality on externality valuation, the potentially large variation in PM-10 levels in Minnesota justifies a wider range for this emission. This potential for substantial regional variations in Minnesota is already evident in the fact that some areas in Minnesota exceed federal air quality standards for this pollutant.

### **D. Volatile Organic Compounds (VOCs)**

The Commission bases its range for VOCs on the Department's proposal, which relies on the Nevada Commission's value for the low end of the range and a Massachusetts damage study for the upper limit. Neither BPA nor the Pace Study provide values for this emission. Nevertheless, the Nevada and Massachusetts values provide a reasonable range for Minnesota. All but one of the non-utility parties proposing values for VOCs recommends the Nevada value for the lower end of the range. The other party, ME3, proposes \$1200 instead. The utilities propose \$1200 as the upper limit in the range.

The Commission considers the lower number reasonable in part because of its general acceptance among the parties in this proceeding. The utilities oppose this value, but the alternative they offer is zero, which the Commission finds unacceptable. Nevada's value was also adopted in one of the most formal proceedings used by the various states to quantify externalities, increasing the Commission's confidence in this cost estimate. The Commission considers \$1200 a reasonable upper limit for this range since it was used in NSP's 1993 resource plan, giving the Commission and the parties practical experience applying this value. The \$1200 also represents a mid-level nationally. It is, for example, less than the \$3652 value applied by the California

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<sup>11</sup> Values nationally range from \$166.60 for BPA to \$5866 in California as applied to Southern California Edison.

Commission to Pacific Gas and Electric, but more than the \$5 cost applied in out-state Southwestern California.

#### **E. Carbon Dioxide (CO2)**

The Commission bases its range for carbon dioxide on the Department's proposal, which relies on a BPA abatement cost study for the lower end of the range and on the Pace Study for the upper limit. The Commission finds the Department's proposed range the most appropriate for interim purposes in Minnesota. Given the unresolved issues related to global warming, the Commission considers the BPA value appropriately conservative. Among jurisdictions that have valued CO2, only the New York Public Service Commission has established a lower value than the \$5.99 established here. Even the \$13.60 value at the high end of the range is slightly lower than the values adopted in the other states. Massachusetts and Nevada have assigned a \$22 per ton value to CO2 emissions, while Wisconsin Public Service Commission has set its value at \$15 per ton.

The Commission concludes that the CO2 range adopted here is a reasonable and prudent approximation of the economic and environmental risks associated with CO2 emissions. The Commission looks forward to a more complete examination of these risks in the upcoming contested case proceedings to establish permanent values.

### **VII. Use of Interim Values**

#### **A. Dispatch of Existing Resources**

NSP expressed concern that utilities might be required to use these values to determine dispatch of existing resources. The Commission finds that the statute does not compel the use of externality values in this way. As discussed above, Minn. Stat. §216B.2422, subd. 3 requires the use of externality values to guide the selection of resources "in all proceedings before the Commission, including resource plan and certificate of need proceedings." The Commission does not have proceedings to determine the day-to-day use of existing resources. Therefore, by its terms, the statute does not apply to daily dispatch decisions.

Other sections of the statute underscore the Legislature's intent to apply externality values to the selection of new resources, not the dispatch of existing facilities. For example, subdivision 2 of the statute requires utilities to file resource plans with the Commission. Resource planning is a forward-looking process that has not, to date, addressed issues of dispatch. Similarly, subdivision 4 establishes a preference for renewable energy in selecting "a **new or refurbished** . . . energy facility (emphasis added)." Subdivision 5 authorizes the use of bidding to "select resources to meet . . . **projected energy demand** (emphasis added)." Taking these provisions together, the

Commission concludes that the use of interim externality values should be mandatory only in proceedings to select new resources, which replace or supplement existing facilities.

## **B. Resource Planning**

Resource planning is the most likely forum for the use of environmental externality values. Therefore, the Commission expects utilities to provide cost information in resource plan proceedings at the following three levels: (1) the direct cost of resources without regard to environmental externalities, (2) the direct cost plus the minimum values in the ranges specified in this proceeding, and (3) the direct cost plus the maximum values in the established ranges. Providing cost projections at these three levels should provide a sufficiently broad picture of resource options for comparison purposes.

## **VIII. Future Proceedings**

The interim values adopted here are temporary and must be replaced by permanent values as fast as reasonably possible without sacrificing the necessary care and deliberation. Therefore, the Commission will initiate a contested case proceeding immediately to develop permanent values in this docket. These permanent values will be developed independent of the interim values established in this proceeding. The decision reached today is not intended to suggest any particular outcome in future proceedings on this matter.

### **ORDER**

1. The Commission establishes the following ranges of interim values:
  - Sulfur Dioxide (SO<sub>2</sub>): \$0 to \$300 per ton;
  - Nitrogen Oxides (NO<sub>x</sub>): \$68.80 to \$1640 per ton;
  - Volatile Organic Compounds (VOCs): \$1180 to \$1200 per ton;
  - Particulates (PM-10): \$166.60 to \$2380 per ton; and
  - Carbon Dioxide (CO<sub>2</sub>): \$5.99 to \$13.60 per ton.
2. Utilities shall apply these values in all proceedings before the Commission that involve the evaluation and selection of resource options, including resource plan and certificate of need proceedings. These values shall not apply to decisions regarding the dispatch of electric power from existing facilities.
3. Utilities shall use the interim values adopted in this Order

in resource plan proceedings by providing estimates of cost of resource options at the following three levels:

(1) the direct cost of resources without regard to environmental externalities,

(2) the direct cost plus the minimum values in the ranges specified in this proceeding, and

(3) the direct cost plus the maximum values in the ranges specified in this proceeding.

4. This Order shall become effective immediately.

BY ORDER OF THE COMMISSION

Burl W. Haar  
Executive Secretary

(S E A L)